Grande Ronde Habitat Improvement Project: Joseph Creek and Upper Grande Ronde River Subbasins

Annual Report
by

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TABLE OF CONTENTS

RESULTS AND DISCUSSION II. ADMINISTRATIVE INTERAGENCY COORDIANTION/EDUCATION

APPENDICES

LIST OF ILLUSTRATIONS

TABLES:

FIGURES

INTRODUCTION

The Joseph Creek and Upper Grande Ronde River subbasins have recently been examined as part of a Grande Ronde Basin study undertaken by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and Oregon Department of Fish and Wildlife (ODFW). The study, funded by the Bonneville Power Administration (BPA), was designed to "compile, by major drainage, the basic information necessary to identify, evaluate, prioritize, and recommend site-specific solutions to major problems impacting the anadromous salmonid resource and fisheries", and "prepare an integrated overall plan for the study area" (CTUIR, 1984). The identification, prioritization, and implementation of habitat work within these subbasins represents a consensus among field staff from State, Tribal, and Federal entities (Tables 1 and 2).

The Joseph Creek subbasin has historically been an excellent producer of summer steelhead, and the Upper Grande Ronde River subbasin an excellent producer of both summer steelhead and spring chinook. Unfortunately, summer steelhead redd counts from 1970 through 1984 indicated a severe reduction in numbers of spawning adults returning to these subbasins; returns for the past three years, however, indicate a reversal in this trend (Table 3). Spring chinook redd counts indicate that returns to the Upper Grande Ronde River subbasin remain well below those observed in the late 1960's and early 1970's (Table 4). Reasons for declines of anadromous fish during the mid-1970's and early 1980's include:

1) problems with passage at mainstem Columbia and Snake River dams,
2) user demands for the fishery resource, and
3) degradation of spawning and rearing habitat.

Considerable effort and money has already been put into resolving mainstem dam passage problems and controlling ocean and river harvest of these stocks. There are now indications these efforts are resulting in increased numbers of adult summer steelhead, and to a lesser degree spring chinook, returning to their native spawning grounds in lower Snake River tributaries (Table 5).

Observations in the Joseph Creek and Upper Grande Ronde River subbasins however, indicate optimum rearing areas for summer steelhead and spring chinook are limited in large portions of these subbasins by degradation of riparian and instream habitats (Noll, 1987). Several factors have contributed to this habitat degradation within project areas, including livestock grazing, farming practices, timber harvest practices, road construction, and stream channelization; livestock grazing and farming practices being the main factors on private lands. The result of this degradation has been loss of shade producing streamside vegetation, thereby causing high summer water temperatures, and destruction of natural pool/riffle ratios which are necessary for good smolt production. It has been estimated there is currently a 28 percent shade cover over most streams within project areas and, with proper habitat enhancement measures, this can be increased to 70 percent; a 250 percent increase over present shade cover. Installation of instream structures can restore pool/riffle ratios to an acceptable ratio. Therefore, through an aggressive habitat enhancement program, optimum habitats for returning adults and their progeny may be realized.

Table 1. The estimated amount of riparian and instream habitat work needed within the Joseph Creek subbasin by stream, and in priority order.

Stream	Species Affected	Priority	Miles of Stream			Miles of Riparian Work				Instream Structures	
						Fencing		Planting			
			USFS	Private	Total	USFS	Private	USFS	Private	USFS	Private
Peavine Creek	Stld	1	8.0	0.0	8.0	4.5	0.0	4.5	0.0	43	0
Elk Creek	Stld	2	3.5	5.0	8.5	3.5	5.0	3.5	5.0	25	35
Chesnimnus Creek	Stld	3	12.0	8.0	20.0	12.0	8.0	8.0	4.0	60	40
Crow Creek	Stld	4	1.0	13.0	14.0	1.0	13.0	0.0	10.0	10	50
Swamp Creek	Stld	5	5.0	10.0	15.0	5.0	10.0	2.5	5.0	10	20
Pine Cr. System	Stld	6	2.0	20.0	22.0	2.0	18.0	2.0	18.0	10	40
Devil's Run Cr.	Stld	7	5.0	0.0	5.0	2.0	0.0	2.0	0.0	10	10
Davis Creek	Stld	8	7.0	3.0	10.0	7.0	3.0	4.0	3.0	10	0
Butte Creek	Stld	9	0.0	4.0	4.0	0.0	4.0	0.0	3.0	0	10
TNT Gulch	Stld	10	2.0	0.0	2.0	2.0	0.0	2.0	0.0	10	0
Joseph Creek	Stld	11	0.0	12.0	12.0	0.0	12.0	0.0	12.0	0	80
Subbasin Totals			45.5	75.0	120.5	39.0	73.0	28.5	60.0	188	285

Confederated Tribes of the Umatilla Indian Reservation. 1984. Grande Ronde River Basin. Recommended Salmon and Steelhead Habitat Improvement Measures. 92 pp.

wnd2/12

Table 2. The estimated amount of riparian and instream habitat work needed within the Upper Grande Ronde River Subbasin by stream, and in priority order.

Stream	Species Affected	Priority	Miles of Stream			Miles of Riparian Work				Instream Structures	
						Fencing		Planting			
			USFS	Private	Total	USFS	Private	USFS	Private	USFS	Private
Grane Ronde River	Ch,Stld	1	6.0	5.0	11.0	2.0	5.0	1.0	4.0	130	175
Sheep Creek	Ch,Stld	2	7.0	5.0	12.0	1.0	5.0	0.5	2.5	210	175
Fly Creek.	Stld	3	6.0	6.0	12.0	1.0	5.0	0.5	3.0	180	180
Spring Creek	Stld	4	5.0	0.0	5.0	1.0	0.0	2.5	0.0	150	0
S.F. Spring Creek	Stld	5	3.0	0.0	3.0	1.0	0.0	1.5	0.0	90	0
V.F. Catherine Creek	Ch,Stlb	6	3.0	0.0	3.0	0.0	0.0	0.0	0.0	90	0
McCoy Creek	Stld	7	4.0	7.0	11.0	1.0	7.0	3.0	4.0	120	210
Rock Creek	Stld	8	0.0	6.0	6.0	0.0	8.0	0.0	3.0	0	90
Dark Canyon Creek	Stld	9	1.0	2.5	3.5	0.0	2.5	0.0	0.0	15	38
Meadow Creek	Stld	10	7.0	7.0	14.0	1.0	7.0	0.5	0.5	210	210
Indian Creek	Ch,Stld	11	1.0	5.0	6.0	0.5	3.5	0.0	0.0	30	150
Chicken Creek	Ch,Stld	12	5.0	2.0	7.0	1.0	1.0	0.0	1.0	75	70
Catherine Creek	Ch,Stld	13	0.0	5.0	5.0	0.0	4.0	0.0	0.0	0	150
Beaver Creek	Stld	14	1.5	5.0	6.5	0.0	3.0	0.0	0.0	45	150
Five Points Creek	Stld	15	5.5	0.5	6.0	0.0	0.5	0.0	0.5	165	15
Clark Creek	Ch,Stld	16	0.0	6.0	6.0	0.0	4.0	0.0	3.0	0	180
Little Catherine Cr.	Stld	17	1.0	4.0	5.0	0.0	2.0	0.0	1.5	15	60
Bear Creek	Stld	18	5.0	0.5	5.5	0.0	0.0	0.0	0.0	75	8
Limber Jim Creek	Ch,Stld	19	2.0	0.3	2.3	0.0	0.0	1.0	0.3	30	5
Pelican Creek	Stld	20	3.0	0.5	3.5	0.0	0.0	0.0	0.0	45	8
Peet Creek	Stld	21	2.0	1.0	3.0	0.0	0.0	1.0	0.5	60	30
Little Fly Creek	Stld	22	3.0	2.5	5.5	0.0	0.0	0.0	1.0	90	75
Whiskey Creek	Stld	23	1.0	8.0	9.0	0.0	4.0	0.0	2.0	15	120
Jordan Creek	Stld	24	2.0	8.0	10.0	0.0	4.0	0.0	2.0	30	120
N.F. Limber Jim Cr.	Stld	25	2.0	0.0	2.0	0.0	0.0	0.0	0.0	30	0
McIntyre Creek	Stld	26	2.5	5.0	7.5	1.0	3.0	1.0	5.0	75	150
Waucup Creek	Stld	27	5.0	0.0	5.0	0.0	0.0	1.0	0.0	150	0
Burnt Corral Cr.	Stld	28	6.0	0.2	6.2	0.0	0.0	0.0	0.0	90	4
Lookout Creek	Stld	29	3.5	0.8	4.3	0.0	0.0	0.0	0.0	53	24
Little Dark Canyon Cr.	Stld	30	2.0	0.0	2.0	0.0	0.0	0.0	0.0	60	0
Phillips Creek	Stld	31	0.0	6.0	6.0	0.0	2.0	0.0	0.0	0	180
Gordon Creek	Stld	32	0.0	7.0	7.0	0.0	4.0	0.0	2.0	0	210
Dry Creek	Stld	33	0.0	8.0	8.0	0.0	6.0	0.0	4.0	0	240
Cabin Creek	Stld	34	0.0	3.0	3.0	0.0	2.0	0.0	0.0	0	90
SUBBASIN TOTALS			95.0	116.8	211.8	10.5	82.5	13.5	39.8	2,328	3,117

Source: Confederated Tribes of the Umatilla Indian Reservation, 1984. Grande Ronde River Basin. Recommended Salmon and Steelhead Habitat Improvement Measures. 92 pp. wnd2/13

Table 3. Average [1/] summer steelhead spawning ground counts in the Joseph Creek subbasin [2,3/], 1966 through 1987..,

	Average 1966-69	Average 1970-74	Average 1975-79	Average 1980-84	1985	1986	1987
Redds Observed	496	85	26.	87	463	417	359
Miles Surveyed	56	54	43	54	49	46	47
Redds/ Mile	8.9	1.6	0.6	1.6	9.5	9.1	7.6

1 Streams included in the Joseph Creek subbasin summer steelhead spawning ground counts include Butte, Chesnimnus (mainstem, north, and south forks), Crow, Devil's Run, Elk, Peavine, Swamp, and TNT Gulch creeks. All of these creeks, however, may not be inventoried on any given year due to river conditions. This annual variation is reflected in the "Miles Surveyed".

2 Since the Joseph Creek and Upper Grande Ronde River subbasins are both within the Grande Ronde River basin, it is felt spawning ground trends within the Joseph Creek subbasins are also representative of those within the upper Grande Ronde River drainage.

3 Summer steelhead spawning ground counts were obtained from Kenneth L. Witty, District Fish Biologist, Wallowa District, Oregon Department of Fish and Wildlife.

wnd2/10

Table 4. Average 1/ spring chinook spawning ground counts in the Upper Grande Ronde River subbasin 2,3/, 1967 through 1987.

	Average 1967-69	Average 1979-74	Average 1975-79	Ave.rage 1980-84	1985	1986	1987
Redds Observed	382	285	117	94	132	117	367
Miles Surveyed	35	27	24	27	27	27	45
Redds/ Mile	10.9	10.6	4.9	3.5	4.9	4.3	8.2. 1

1/ Late 1960's counts are three or four year averages, 1970-1984 are 5 year averages, and 1985-1987 are counts by individual years.

2/ Streams in the Upper Grande Ronde River subbasin spring chinook spawning ground counts include North Fork, South Fork, and mainstem Catherine Creek, mainstem Grande Ronde River, and Sheep Creek.

3/ Spring chinook spawning ground counts were obtained from Duane C. West, District Fish Biologist, La Grande District, Oregon Department of Fish and Wildlife.

wnd2/14

Table 5. Counts of returning adult spring chinook and summer steelhead Over lower Granite Dm on the lower Snake River, 1975 through 1987.

Year	Summer Steelhead (June 1 – October 31)	Spring Chinook 1/ (April 1 – June 17)
Annual Counts 2,3,4/		
1975	13,523	17,639
1976	20,020	20,475
1977	48,037	37,770
1978	23,565	41,006
1979	20,281	7,539
1980	32,677	6,758
1981	33,234	13,642
1982	63,070	12,746
1983	76,673	10,026
1984	86,448	7,921
1985	102,104	27,737
1986	116,622	32,929
1987	54,055	29,781

1 Count includes adults and jacks.

2 Counts for 1975 through 1984 were taken from the Oregon Department Of fish and Wildlife, Columbia River Management, Columbia River Fish Counts Report, January 1985.

3 1979, 1983, and 1984 revisions to the table, and 1985 and 1986 figures were obtained through personal communication with Howard Jensen, Oregon Department of Fish and Wildlife, Clackamas, Oregon. January 26.1987.

4 1987 counts were obtained through personal communication with Howard Jensen, Oregon Department of Fish and Wildlife, Clackamas, Oregon. March 1, 1988.

Wnd2/8

DESCRIPTION OF STUDY AREAS

Joseph Creek Subbasin

The Joseph Creek subbasin constitutes a major subbasin within the Grande Ronde River basin of northeast Oregon. It drains approximately 556 square miles of the 3,950 square mile Grande Ronde River basin and empties into the Grande Ronde River 4.3 miles above the confluence of the Grande Ronde and Snake rivers (Figure 1). Approximately 75 percent of the Joseph Creek subbasin is within the project area. Not included in the project area is lower Joseph Creek in Washington state and the Cottonwood Creek drainage which enters Joseph Creek 4.4 miles above Joseph Creek's confluence with the Grande Ronde River (Figure 1).

Within the project area 120.5 miles of stream have been identified as in need of habitat enhancement; 75 miles on private land and 45.5 miles on National Forest lands (Table 1).

Upper Grande Ronde River Subbasin

The Upper Grande Ronde River subbasin constitutes approximately 1,622 square miles of the Grande Ronde River basin above the confluence of the Grande Ronde and Wallowa rivers at Rondowa; 81.4 miles upstream from the confluence of the Grande Ronde and Snake rivers (Figure 2). A major portion of the Upper Grande Ronde River subbasin, including the mainstem Grande Ronde River and 33 of its tributaries, are within the project area.

Within the project area 211.8 miles of stream have been identified as in need of habitat enhancement; 116.8 miles on private lands and 95.0 miles on National Forest lands (Table 2).

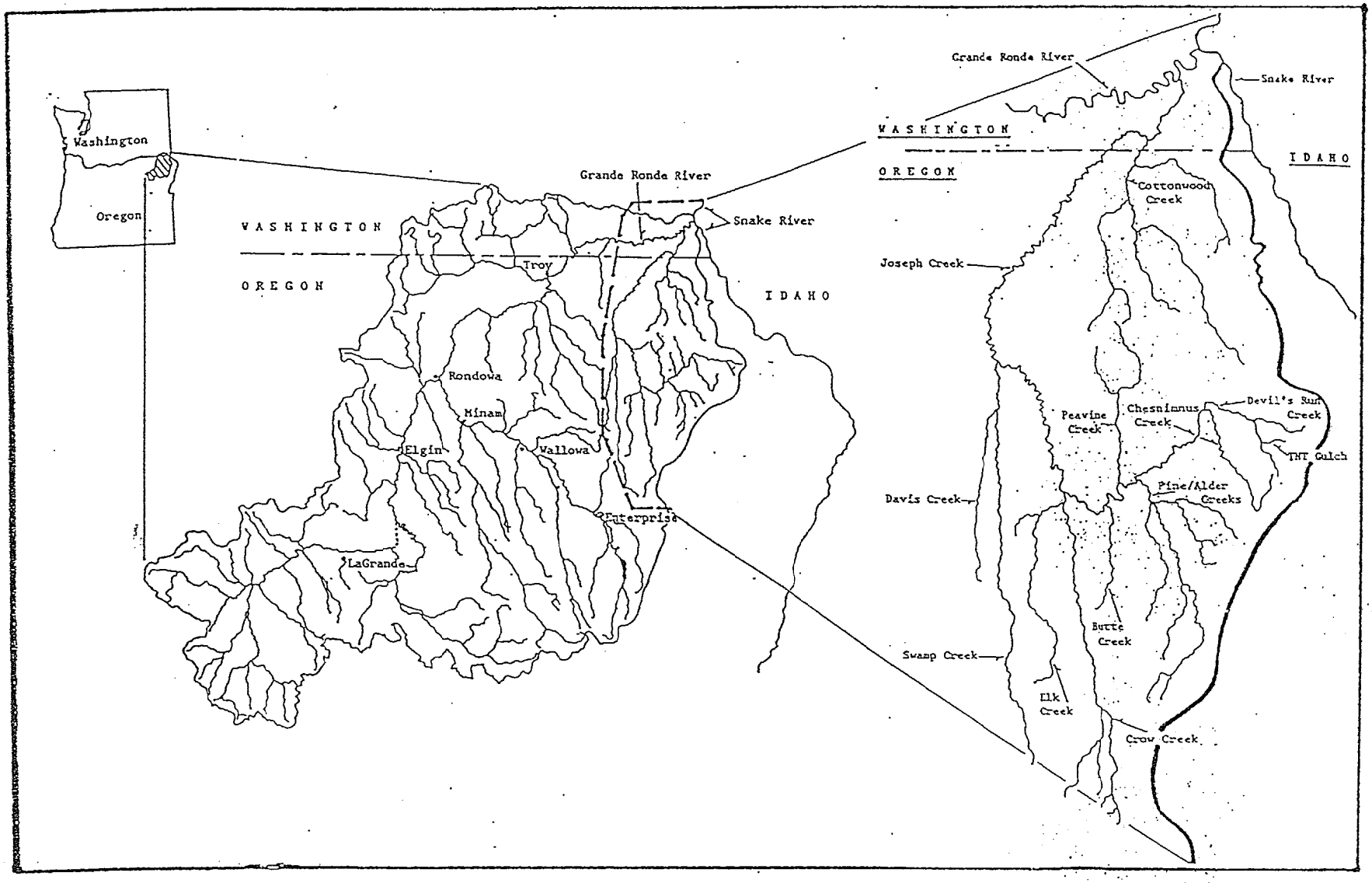

Figure 1. The Joseph Creek Drainage as it relates to the Grande Ronde River Basin of northeast Oregon and southeast Washington.

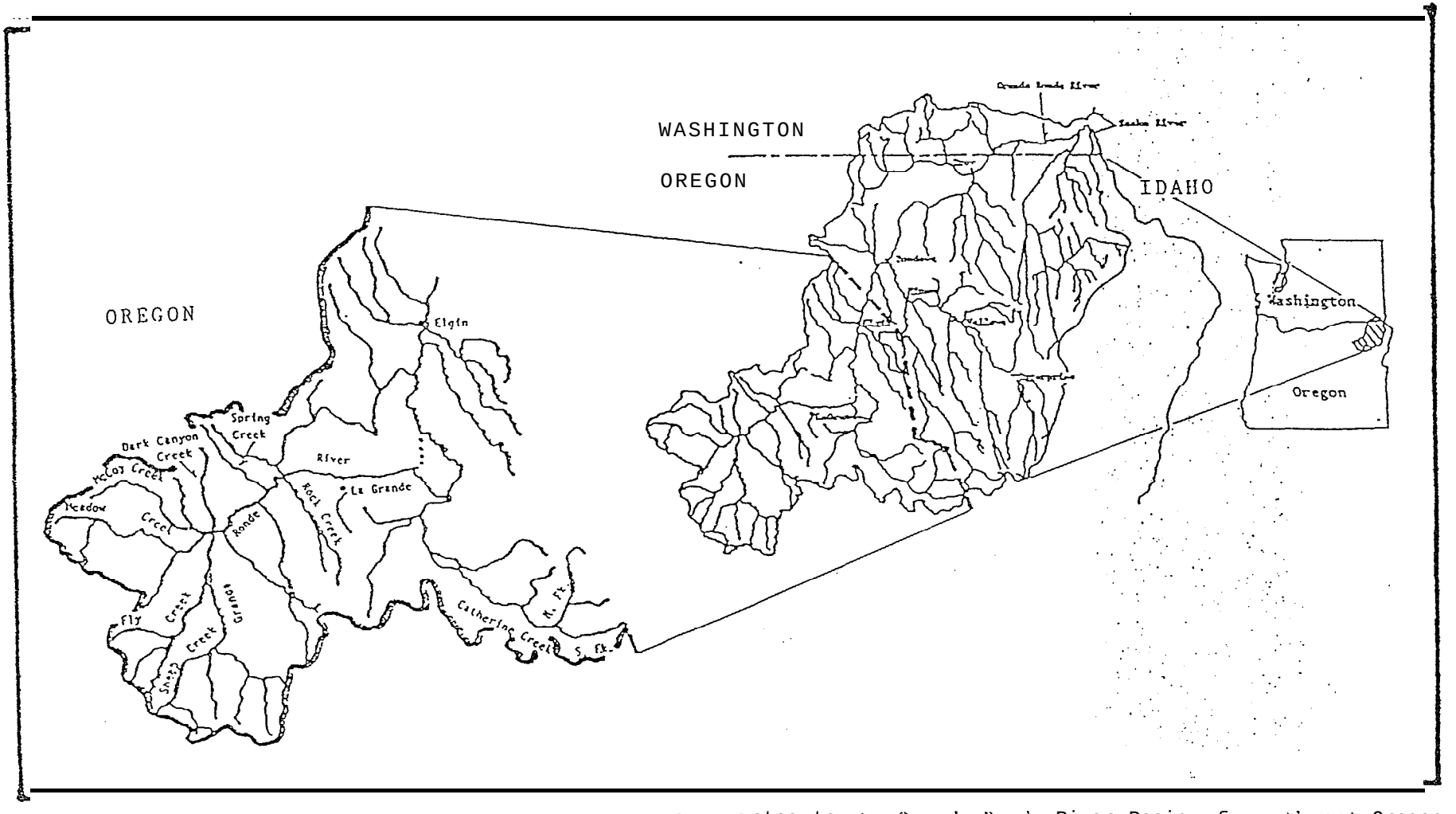

Figure 2. The Upper Grande Ronde River Drainage as it relates to the Grande Ronde River Basin of northeast Oregon.

METHODS AND MATERIALS

The goal of this program is to optimize spring/summer chinook and summer steelhead smolt production within the Grande Ronde River Basin using habitat enhancement measures. To accomplish this goal, work will progress in three phases:

1) planning and preparation (prework),
2) implementation, and
3) maintenance and evaluation (postwork).

Prework

Prior to actual project implementation the following activities are to be conducted:

1. Project planning. Project planning includes design and layout of all work to be done onsite, landowner coordination, development of contracts and contract specifications, and obtaining necessary work permits.

2. Onsite preparation. Onsite preparation includes locating and staking most work sites. These include easements or right-of-ways, fence, instream structure, offsite water development, planting, and miscellaneous lease or construction related sites.

3. Riparian lease development and procurement. Riparian lease development and procurement includes meeting with landowners and/or their legal representatives specifically for the purpose of developing an acceptable lease text, and/or signing lease documents.

4. Photopoint establishment. Photopoint establishment includes locating and placing permanent markers at sites from which photographs can be taken at regular intervals, thereby depicting riparian changes through time. Also associated with photopoint establishment is development of a photopoint notebook for each project area.

5. Habitat inventories. Inventorying of physical parameters (i.e., flow features, substrate type, riparian vegetation, etc.) within riparian areas is necessary to determine which parameters, if any, are in need of restoration or enhancement. Prior to designing or implementing any riparian work, standard physical parameters are measured and evaluated. Data from these inventories are used to help prioritize streams and explain habitat enhancement needs to landowners.

Implementation

Implementation entails the actual on-the-ground work phase of the project. Implementation activities will normally be accomplished in the following sequence:

1. Instream structures. During late summer and early fall when stream flows are lowest, structures will be installed in streams at locations preselected by fishery biologists and/or hydrologists. Structures of various types will be used to provide optimum pool/riffle ratios, raise riparian water tables, and collect spawning gravels, thereby increasing quantity and quality of rearing and spawning habitats. Rock jetties and deflectors will be the primary structures used to stabilize streambanks. Boulders will be used to create small rearing pools and hiding cover.

2. Planting. During the early spring, vegetation will be planted at preselected locations along streams within project areas. Since high summer water temperature is the main limiting factor, plantings will be made to provide stream shade, thereby reducing summer water temperatures and increasing steelhead utilization of streams. The maximum shade attainable for most streams in project areas is approximately eighty percent. The objective of this phase of the project is to reach a minimum of seventy percent shade and have water temperatures of no more than 68°F within twenty years of project implementation.

3. Fencing. Destruction of streamside vegetation by domestic livestock has been a major problem within project areas. To provide protection from livestock and thereby promote rapid recovery of existing and planted vegetation, fences will be constructed along riparian zones within project areas.

4. Offsite water developments. In an attempt to reduce the number of water gaps in riparian fences (thereby reducing fence construction and maintenance costs), and to encourage livestock utilization of vegetation away from riparian areas, offsite water sources will be developed.

5. Habitat monitoring transects. Within selected project areas permanent habitat monitoring transects will be established. Specific measurements will then be taken along each transect. These measurements will be repeated at regular intervals and compared with original measurements as a means of quantitatively measuring environmental changes through time.

Postwork

Postwork entails all maintenance and evaluation of work which has been done within project areas. This phase of the work will usually begin the year following completion of implementation and will continue for several years.

RESULTS AND DISCUSSION

I. FIELD ACTIVITIES

It is planned to accomplish habitat enhancement work on private lands in three phases:

1) planning and preparation (prework),
2) implementation, and
3) maintenance and evaluation (postwork).

Activities undertaken during this year were within all phases.

PREWORK

Prework activities are divided into five successive stages:

1) project planning,
2) onsite preparation,
3) riparian lease procurement,
4) photopoint establishment, and
5) habitat inventories.

During this year activities within all five stages were undertaken.

Project Planning

Work done in the project planning stage included: a) design and layout of onsite work, b) landowner coordination and, c) development of contracts and contract specifications.

a. Design and Layout. Identification of property boundaries for privately owned lands along priority streams in the Joseph Creek and Upper Grande Ronde subbasins is the first step in preparation for doing habitat enhancement work. To accomplish this, county ownership maps were obtained from the respective County Assessor's offices. Once land ownerships and property boundaries have been identified on these maps and/or transferred to topographic maps, aerial photographs (at a scale of 16 inches per mile) are obtained from the U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service (USDS-ASCS). Individual streams were then traced from these photographs onto acetate, property lines and major geographic features added, and ozalid copies of these maps produced. Once completed, ozalid maps were broken down into 8½ x 11 inch segments and reproduced for use in on-the-ground planning activities, as descriptive parts of riparian lease agreements, and as parts of contract specifications for contracted riparian enhancement work.

During 1987 acetate, ozalid and 8½" x 11" maps for 30.3 miles of Upper Grande Ronde tributaries were completed. Additionally land ownership (County Assessor) maps for all streams in the Upper Grande Ronde subbasin (except Dry Creek, priority number 33) and all streams in the Joseph Creek subbasin have been obtained. Topographic maps for all tributaries to the Upper Grande Ronde have been obtained

and aerial photos have been purchased for all upper Grande Ronde tributaries except for Pelican Creek (priority number 20) and Burnt Corral Creek (priority number 28) (Table 6).

U.S. Forest Service (USFS) and Soil Conservation Service (SCS) designs for offsite water source developments were reviewed and discussed with respective agency personnel. Following intial review and onsite evaluation water developments were designed for each of nine offsite water sources.

Designs for instream structures were reviewed and modified prior to use in Sheep Creek in the Upper Grande Ronde River subbasin.

b. Landowner Coordination. Considerable time was spent during the year meeting with landowners in the Joseph Creek and Upper Grande Ronde River subbasins. Contacts were in the form of telephone conversations, on-the-ground inspection of proposed project sites, slide presentations, and letters. During these meetings emphasis was placed on meeting fishery needs while at the same time benefiting landowners.

During 1987 nine landowners in the Joseph Creek subbasin and seven landowners in the Upper Grande Ronde River subbasin were contacted regarding possible work on their properties (Table 7).
An onsite meeting was held with Mr. Matt Kneisel of the Baker, Oregon Bureau of Land Management (BLM) office to evaluate riparian habitat needs along Sheep Creek and to begin development of a cooperative agreement between BLM and ODFW. This agreement would allow ODFW to construct riparian fences along approximately 0.6 miles of Sheep Creek, thereby tying together projects on USFS, BLM, and private lands.

c. Development of Contracts and Contract Specifications. Considerable time during 1987 was devoted to developing contracts and contract specifications for fence, instream structure, and offsite water development contracts. Specifications for construction materials were also developed as a basis upon which materials vendors could bid.

Specifications were developed for three equipment/operator rental contracts (one instream and offsite water development contract for Sheep Creek, one log procurement contract for Sheep Creek, one offsite water development contract on Swamp Creek, and one planting contract for Chesnimnus and Swamp creeks).

High tensile smooth wire fence specifications were completed and submitted to the ODFW Engineering Section for review and inclusion in two fencing General Construction Contracts (Chesnimnus and Swamp creeks). Additionally, complete bid packages were developed and contracts awarded through the Northeast Region for two fencing General Construction Contracts (Fly and Sheep creeks). Contract development included developing and/or revising Technical Specifications and Special Conditions sections of the contract as well as drawings, maps, and proposal forms.

Table 6. Mapping activities completed for private properties along the Joseph Creek and Upper Grande Ronde River subbasins, through December 31, 1987.

	County Assessor Maps	Topographic Maps	Aerial Photos Purchased	Acetate Maps (miles)	Ozalid Maps (miles)	8 1/2x11 Maps
Upper Grande Ronde River Subbasin						
Grande Ronde River	X	X	X	3.8	3.8	3.8
Sheep Creek .	X	X	X	7.5	7.5	7.5
Fly Creek	X	X	X	7.8	.7.8	7.8
Spring Creek	----------	----------	No Private Lands	----------	----------	----------
S.F. Spring Creek	----------	----------	No Private Lands	----------	----------	----------
N.F. Catherine Creek	----------	----------	No Private Lands	----------	----------	----------
McCoy Creek	X	X	X	8.6	8.6	8.6
Rock Creek	X	X	X	14.4	14.4	14.4
Dark Canyon Creek	X	X	X	1.9	1.9	1.9
Meadow Creek	X	X	X	10.2	10.2	10.2
Indian Creek	X	X	X	11.7	11.7	11.7
Chicken Creek	X	X	X	--		
Catherine Creek	X	X	X	9.2	9.2	9.2
Beaver Creek	X	X	X	6.2	6.2	6.2
Five Points Creek	X	X	X	2.4	2.4	2.4
Clark Creek	X	X	X	12.9	12.9	12.9
Little Catherine Creek	X	X	X	5.5	5.5	5.5
3ear Creek	X	X	X	--	--	--
Limber Jim Creek	X	X	X	--	I-	--
Pelican Creek	X	X	--	--	--	--
Peet Creek	X	X	X	--		
Little Fly Creek	X	X	X	2.6	2.6	2.6
Whiskey Creek	X	X	X	9.3	9.3	9.3
Jordan Creek	X	X	X	8.0	8.0	8.0
N.F. Limber Jim Creek	----------	----------	No Private Lands	----------	----------	----------
McIntyre Creek	X	X	X	--	--	--
Waucup Creek			No Private Lands	----------	----------	----------
Burnt Corral Creek	X	X	--	--	--	--
Lookout Creek	X	X	X	0.6	0.6	0.6
Little Dark Canyon Creek	----------	----------	No Private Lands	----------	----------	----------
Phillips Creek	X	X	X	--	--	--
Gordon Creek	X	X	X	--	--	--
Dry Creek	--	X	X	--	--	--
Cabin Creek	X	X	X	--	--	--
Subtotals	--	--	--	105.5	105.5	105.5
Joseph Creek Drainage						
Peavine Creek	----------	----------	No Private Lands	----------	----------	----------
Elk Creek	X	--	X	--		1.8
Chesnimnus Creek	X	--	X	10.2	10.2	10.2
Crow Creek	X	I-	X	15.7	15.7	15.7
Swamp Creek	X	--	X	14.3	14.3	14.3
Pine Creek System	X	--	X	18.8	18.8	18.8
Devil's Run Creek	----------	----------	No Private Lands	----------	----------	----------
Davis Creek	X	--	--	I-	--	--
3utte Creek	X	--	X	4.6	4.6	4.6
TNT Gulch	----------	----------	No Private Lands	----------	----------	----------
Joseph Creek	X	--	X	4.5	4.5	4.5
Subtotals	--	--	--	68.1	68.1	69.9
Totals	--	--	--	173.6	173.6	175.4

wnd2/9

Table 7. Landowners contacted in the Joseph Creek and Upper Grande Ronde River subbasins, for the purpose of discussing riparian management programs and/or riparian lease development in 1987.

Joseph Creek Landowners	Stream Involved.	Upper Grande Ronde Landowners	Stream Involved
Anderson	Chesnimnus Creek	Bowman	Meadow Creek
Birkmaier	Elk Creek	Miesner	Meadow & McCoy
Darneille,	Joseph & Chesnimnus	Schiller/Vey	Sheep Creek
Dawson	Crow & Chesnimnus	Seeger	Whiskey & Jordan
Fleshman*	Crow Creek	Waite*	Meadow Creek
McClaran	Pine Creek,System	Williams*	Rock Creek
Olson*	Swamp Creek	BLM*	Sheep Creek
Snyder/WJS*	Crow Creek		
Stein*	Crow Creek		

*Landowners with whom considerable time was spent to develop an acceptable riparian management plan and/or lease agreement.

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Following construction of 12.9 miles of fence during the 1987 field season, work was begun on revising/rewriting high tensile smooth wire fence specifications to reflect organization and construction modifications.

Prior to all fence, instream, and offsite water development work, prebid inspection tours were conducted by ODFW personnel for all interested bidders.

Onsite Preparation

Prior to signing leases or construction contracts, all lease boundaries and work sites must be identified, staked, and agreed upon by the landowner and/or contractor.

During 1987, 17.2 miles of fenceline in the Joseph Creek subbasin and 14.7 miles of fenceline in the Upper Grande Ronde River subbasin were staked for lease development and/or construction purposes. Leases were not signed on all staked areas, however. Additionally, 2.0 miles of Joseph Creek (Darnielle), 1.5 miles of upper Chesnimnus Creek (Anderson), and 1.5 miles of Crow Creek (Stein) were evaluated as potential lease areas.

Instream structure sites on 5.0 miles of Sheep Creek were staked and rock and log sources identified prior to implementation of an instream work contract. Additionally, portions of Meadow and McCoy creeks were examined and evaluated to determine feasibility of doing instream work in 1988.

Personnel from the Union and Wallowa county SCS's and ODFW inspected offsite water sources along Sheep and Swamp creeks prior to implementation. A meeting was also held with the landowner along Sheep Creek (Schiller-Vey) to discuss these developments.

Offsite water sources, and rock sources for water developments and instream structures to be completed in 1988, were identified.

Riparian Lease Procurement

Seven riparian leases were signed in 1987; one Joseph Creek subbasin landowner (Fleshman/Crow Creek) and six upper Grande Ronde subbasin landowners in (Waite/Meadow Creek, Misener/Meadow Creek, Misener/McCoy Creek, Vey/Sheep Creek, Vey/Sheep Creek, and BLM/Sheep Creek). These seven leases will protect 11.8 miles of stream and 174.1 acres of riparian habitat for fifteen years each. Combined with leases signed in 1985 and 1986 we now have 21.6 miles of stream and 302.8 acres of riparian habitat leased (Table 8).

A meeting was held with Sallie Williams/Rock Creek at which time it was decided that ODFW would no longer pursue a lease with her for riparian lands along Rock Creek. Primary considerations in making this decision were based on estimated benefit/cost and lack of a firm commitment from the landowner.

Table 8. Leased riparian lands in the Joseph Creek and upper Grande Ronde River drainages, 1985 through 1987.

Property Owner	Stream	Stream Miles leased	Acres Protected
1985			
Olsen	Swamp Creel	2.4	6.2
Birkmaier	Elk Creek	0.6	7.7
1986			
Boise Cascade	Swamp Creek	2.6	46.8
Smith	Fly Creek	1.2	16.2
Yost	Chesnimnus Creek	3.0	41.8
1987			
Fleshman	Crow Creek	1.3	10.5
Waite	Meadow Creek	1.2	19.7
Misener1/	Meadow Creek	2.7	56.8
Misener	McCoy Creek	1.6	19.6
Vey	Sheep Creek	1.3	18.9
Vey	Sheep Creek	3:o	35.5
BLM1/	Sheep Creek	0.7	12.8
Totals		21.6	302.8

1/ This lease is the result of a cooperative agreement between ODFW and BLM. It ties together ongoing projects on Sheep Creek which includes USFS, BLM, ODFW, and private landowners.

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Photopoint Establishment

Fifty photopoints were established and initial photographs taken along Fly Creek (Smith), McCoy Creek (Misener), Meadow Creek (Misener and Waite), Sheep Creek (Vey and BLM), and Swamp Creek (Boise Cascade) during 1987. All photopoints were marked with a steel post and a metal identification tag.

Photopoint notebooks were developed for all photopoints which were established during 1987.

Habitat Inventories

Though some habitat inventories were completed in 1987, most intensive efforts were made during the 1986 field season. During 1987, 8.1 miles of streams within the Upper Grande Ronde River subbasin were inventoried. No inventories were done in the Joseph Creek subbasin.

Prior to data summarization, the Organic Debris Index was modified to more accurately reflect the relative importance of this habitat component to fish (Appendix A). All data collected in 1985, 1986, and 1987 were then summarized (Appendix B) and used in development of an Implementation Plan for April 1, 1988 through March 31, 1992.

IMPLEMENTATION

Implementation activities undertaken during 1987 were in the instream structure, planting, fencing, offsite water development, habitat monitoring transects, and miscellaneous field activities categories.

Instream Structures

One instream structure contract on Sheep Creek was implemented in 1987. Under this contract 23 log structures to develop pool habitat for juvenile spring chinook and summer steelhead were installed in a 5.0 mile stretch of Sheep Creek. Snags were also cabled into four bends along Sheep Creek to provide fish hiding cover as well as some streambank stabilization.

Planting

Within the Joseph Creek subbasin, planting of the Swamp Creek (Boise Cascade) and Chesnimnus Creek (Yost) project areas was completed during 1987.

Along 3.0 miles of Chesnimnus Creek 552 plants were planted; 309 white and yellow willow (*Salix spp*), 196 Redosier dogwood (*Cornus stolonifera*), and 47 Ponderosa pine (*Pinus ponderosa*).

Along 2.6 miles of Swamp Creek 1,897 plants were planted; 201 white and yellow willow, 200 Redosier dogwood, and 1,496 Ponderosa pine.

In the Upper Grande Ronde River subbasin, 51 Redosier dogwood and 650 coyote willow (*Salix spp*) cuttings were planted by hand along Sheep Creek.

Seeding of areas disturbed by fence construction, instream structure construction, offsite water developments, and/or tree planting activities were completed along Chesnimnus, Elk, and Sheep creeks. All areas were seeded with a mix consisting of Alsike white clover (20%), Durar hard fescue (33%), Travois alfalfa (27%), and Climax Timothy (20%).

Fencing

Four contracts resulted in construction of 12.9 miles of high tensile smooth wire fence during 1987; 3.1 miles in the Upper Grande Ronde subbasin and 9.8 miles in the Joseph Creek subbasin.

Additionally, considerable time was spent by ODFW employees constructing wing fences at watering gaps, repairing existing fences, and constructing fences around offsite water developments.

Offsite Water Developments

Development of offsite water sources were undertaken to accomplish one or more of the following objectives: 1) reduce the number of watering gaps needed in the riparian fences (thereby reducing fence construction and maintenance costs) and 2) encourage livestock to better utilize pasture areas away from riparian zones, thereby lessening livestock pressure.

During 1987 nine offsite water developments were completed; four along Sheep Creek (Vey) and five along Swamp Creek (Boise Cascade). Additionally, development of one spring and water ram installation on Meadow Creek (Waite) was almost completed.

Habitat Monitoring Transects

One hundred habitat monitoring transects were established on three project streams during 1987; Chesnimnus (30), Elk (30), and Sheep creeks (40). Subsequently, data was collected from all transects. These data have not yet been analyzed, however, because development of a computer program for this purpose has not yet been completed.

Miscellaneous Field Activities

Signs denoting riparian project areas as a cooperative effort between BPA, ODFW, and private landowners were placed on riparian fences along Chesnimnus, Elk, and Swamp creeks.

POSTWORK

Maintenance

Minimal maintenance was undertaken during 1987. Approximately one-half day was spent doing maintenance on 0.5 miles of fence along Chesnimnus Creek.

Photopoints

Pictures were taken during the spring and fall at most photopoints established prior to 1987. Initial photopoint pictures were also taken at all photopoints established in 1987 (see PREWORK Photopoint Establishement).

Miscellaneous

An annual breedig bird surey along the leased riparian habitat area Of Swamp Creek was conducted by ODFW district personnel in July (Appendix C)

II. ADMINISTRATIVE AND INTERAGENCY COORDINATION/EDUCATION

ADMINISTRATIVE

Administrative activities during 1987 included preparation of reports and budgets, program development, supervision of personnel, and contract administration.

Reports and Data Summaries

Monthly and annual progress reports for the Joseph Creek and Upper Grande Ronde River subbasins were submitted during 1987 as per contract agreements with BPA.

All habitat monitoring transect data collected from Sheep Creek during 1987 was reviewed and proofed.

Habitat inventory data summarizations were completed for all currently available data on Joseph Creek and Upper Grande Ronde River subbasins (Appendix B).

Budgets/Purchases

Considerable time during this report period was spent obtaining bids, purchasing and/or receiving shipments of materials for fence construction, offsite developments, and instream structure work. Bids were received on six fence materials contracts (two each for pressure treated posts, treated lumber, and metal products), three offsite water development materials contracts (tanks, spring boxes, and plumbing supplies), and several miscellaneous purchasing orders for instream structure and habitat transect monitoring materials (culvert, rebar, geotextile, wire mesh, and miscellaneous supplies).

Program Development

Work began on developing a computer program to summarize habitat monitoring transect data. Additionally, the field manual for habitat monitoring transect work was rewritten to better facilitate field data collection and transect establishment.

Modifications of habitat inventory guidelines for an Organic Debris Index were completed.

An Implementation Plan and Work Statement covering the April 1, 1988 through March 31, 1992 period were completed and submitted to BPA.

Acetate mapping guidelines were developed for use by field personnel.

Personnel

Randal N. Reeve, Fish Habitat Technician for the Joseph Creek drainage was promoted to Fish Habitat Biologist II in charge of BPA-funded riparian

Habitat enhancement projects for the Umatilla River subbasin. Randy assumed his new position in mid-August.

Interview for Mr. Reeve's Technician II position in Enterprise were held in October and Darryl M. Gowan was hired. At the end of December 1987 Mr. Gowan transferred to the ODFW Green Forage/Deer Enhancement program in La Grande.

Contract Administration

Both General Construction and Equipment/Operator Rental contracts were administered by project personnel during 1987. Four General Construction contracts for construction of riparian fences, and four Equipment/Operator Renal contracts for installation of instream structures, log procurement, offsite water developments, and planing were completed.

INTERAGENCY COORDINATION/EDUCATION

Interagency Coordination

Monthly meetings of the Wallowa County Soil and Water Conservation District (WCSWCD) and Coordinated Interagency Resource Coundil (CIRC) were attended.

A summary of program activities within the Upper Grande Ronde and Joseph Creek subbasins was prepared for a meeting of the Area 8 Oregon Association of Conservation Districts (OACD).

Several talks and/or slide programs were presented to resource agencies and individuals who showed an interest in riparian management.

Extensive time and effort was put into a coordinated effort between the USFS and the ODFW to develop a habitat transect monitoring plan.

Considerable time was spent with personnel from Union and Wallowa County Soil Conservation Service Districts to locate useable offsite water development sites and design acceptable development plans.

Several tours of project areas in both the Joseph Creek and Upper Grande Ronde subbasins were conducted. Tours included personnel from BPA, ODFW, USFS, BLM, Warm Springs Tribe, and several local resource groups.

Education

A slide talk on riparian areas and their proper management was given to a sixth grade class at the Stella Mayfield school in Elgin, Oregon. Following this introduction to riparian management, ODFW personnel assisted the students in planting and fencing a riparian area near the confluence of the Grande Ronde River and Phillips Creek (Appendix D).

Department of Fish and Wildlife personnel assisted with the annual Wallowa County sixth grade conservation tour. During the tour about 95 students from four Wallowa County schools were given an introduction to riparian areas and their value.

A slide presentation on riparian management was given to a 4-H club. Following the presentation, 4-H members assisted ODFW personnel in planting trees along Swamp Creek.

A riparian habitat display was developed and used as part of an ODFW display at the SCS sponsored Wallowa County "Landfest".

LITERATURE

Confederated Tribes of the Umatilla Indian Reservation. 1984. Grande Ronde River Basin. Recommended Salmon and Steelhead Habitat Improvement Improvement Measures. 92 pp.

Noll, William T. Et.al. 1987. Grande Ronde River Basin Fish Habitat Improvement Implementation Plan. 29 pp.

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APPENDIX – A

Riparian Habitat Inventories:

Methodologies and criteria used
To identify treatment needs

RIPARIAN HABITAT INVENTORY METHODOLOGIES

Riparian habitat inventories were designed to be one-time-through, nonrepetative inventories whose objective is to give an overall picture of instream and riparian habitats for project design and prioritization purposes only. Riparian habitat transect monitoring guidelines, whose objective is to monitor habitat changes over time have also been developed and implemented but will not be a part of this report.

Riparian habitat inventory methodologies were developed as a cooperative effort between ODFW and the USFS (Wallowa Whitman National Forest) for the purpose of consistent data collection within the Grande Ronde River Basin. Methodologies were first developed and implemented in 1985. Following the 1985 field season some procedures were revised to facilitate more accurate field data collection and/or to better reflect actual habitat conditions.

Habitat inventory categories which were examined, and will be discussed herein are: 1) flow features, 2) organic debris, 3) shade density, and 4) riparian vegetation density.

1. Flow features. Flow features were divided into three categories: a) pools, b) glide/runs, and c) riffles. Each flow feature was then recorded as a percentage, in 5% increments, based on a visual estimate. Flow features were defined as follows:
   a. Pools. Portions of the stream that are deeper and of lower velocity than the main current (Arnette, 1976).
   b. Glide/runs. Portions of the stream where the water surface is not broken, but is shallower than a pool and has a velocity as fast, or faster, than the main current (Duff and Cooper, 1976).
   c. Riffles. Faster, shallower areas in which the water surface is broken into waves by wholly or partially submerged obstructions.
2. Organic debris. The organic debris index was designed to reflect the amount of cover within a stream channel which was provided by nonliving organic debris (leaves, branches, logs, etc.), either stationary or transient in nature.

Two indicies were used, one in 1985 and one thereafter. The 1985 organic debris index was based on the following scale (Table A-1):

Table A-1 Organic debris index rating chart used in 1985.

Rating	Debris description
1	No organic debris.
2	Infrequent debris; debris present consists of small, Floatable organic debris.
3	Debris of moderate frequency; a mixture of small to medium Debris affecting less than 10% of the channel area.
4	Numerous debris; a mixture of medium to large size debris affecting 11 to 30% of the channel area.
5	Debris dams of predominantly large material affecting 31 To 50% of the channel area and often occupying the total Width of the channel.
6	Extensive, large debris dams either continuous or influencing Over 50% of the channel area. Forece water onto the Floodplain even at moderate flows. Generally presents A fish migrain blockage (Roegen, 1983).

The 1985 index proved to be too inflexible. Therefore a new Organic Debris Index was developed for 1986 and thereafter which used two variables; debris frequency and debris size (Table A-2).

Table A-2. Organic debris index rating chart used in 1986 and later.

Frequency rating:	Description of frequency and size
0	None
1	Debris covering less than 10% of the channel area.
2	Debris covering 11 to 30% of the channel area.
3	Debris covering 31 to 50% of the channel area.
4	Debris covering over 50% of the channel area.
5	Extensive debris jams which force water onto flood plain even with moderate flows. May present a fish migration blockage.
Size rating:	
A	Small, floatable organic debris.
B	Mixture of small (1-6" dia.) to medium (7-12" dia.) size debris.
C	Mixture of medium to large (more than 12" dia.) size debris.
D	Predominantly large debris.

During field surveys each survey section was given an organic debris index class based on Table A-2 (i.e. 2C - a mixture of medium or larger size debris which covered 11-30% of the stream channel). This class was later converted to a numeric value using a matrix (Table A-3). The numeric values within the matrix were developed to reflect the relative importance of the frequency and size of debris to fish utilization (Table A-4).

Table A-3. Organic debris matrix for assigning numeric values to debris frequency and size combinations.

	5	3	6	6	7
Organic	4	4	5	5	6
Debris	3	3	5	5	6
Frequency	2	3	5	5	5
	1	2	3	4	3
		A	B	C	D
		Organic	Debris		Size

Table A-4. Relative importance of organic debris index numbers to fish utilization.

Numeric Value	Value as fish habitat
0 - 2	Little or no value to fish.
3 - 4	Moderate value to fish.
5	Maximum value to fish.
6	Good value as fish habitat, but may prove detrimental at certain flows.
7	Primarily detrimental to fish, but may provide some useable cover.

3. Shade density. The shade density class was developed as a means of estimating the percentage of the overhead canopy which would provide shade at the heating period of the day. The percent of canopy cover was estimated and then a shade density class rating as follows:

Percent Shade	0	1-10	11-30	31-50	51-70	71-90	91-100
Shade Density Class	0	5	20	40	60	80	90

4. Riparian Vegetation Density The riparian vegetation density class was developed as a means to quantify the present and potential shade producing trees and shrubs within a given distance of a creek. Again, as with the organic debris index, two indicies were used for the riparian vegetation density index; one for 1985, and one thereafter. The 1985 index was based on brush within six feet of the water's edge versus trees within 25 feet of the water's edge. For any survey section, two density classes were required, "Brush Density Class" and "Tree Density Class" based on Tables A-5a and A-5b.

Table A-5a. Brush density class designations used in 1985.

Percent Cover	0	1-10	11-20	21-40	41-60	61-80	81-100
Brush Density Class	0	5	15	30	50	70	90

Table A-5b. Tree density class designations used in 1985.

Percent Cover	0	1-20	21-40	41-60	61-80	81-100
Tree Density Class	0	15	30	50	70	90

Beginning in 1986 the brush and tree density classes were replaced with one "Riparian Vegetation Density Class" (Table A-6). Using this methodology the percent of cover provided by trees and shrubs within 10 feet of the water's edge and less than five feet tall were rated separately from the trees and shrubs within 20 feet of the water's edge and greater than 5 feet tall. Coniferous and decidous vegetation were also recorded separately. Therefore, for any survey section, four density classes were required (confierous vegetation < 5 ft. tall and within 10 ft. of water's edge; deciduous vegetation < 5 ft. tall and within 10 ft. of water's edge; coniferous vegetation > 5 ft. tall and within 20 ft. of water's edge; and deciduous vegetation > 5 ft. tall and within 20 ft. of water's edge.)

Table A-6. Riparian Vegetation Density class designations used in 1986 and later.

Percent Cover	0	1-10	11-20	21-40	41-60	61-80	81-100
Riparian Vegetation Density class	0	5	15	30	50	70	90

APPENDIX B

Riparian Habitat Inventory Summaries:

by Subbasin and stream

Table B-1. A summary of riparian habitat inventory data[1] by stream within the upper Grande Ronde River subbasin.

Stream	Flow Features (%)[2] P	G/R	R	Organic Debris Index	Riparian Vegetation Density Class 1985[3] Br	Tr	1986 - 1987[4] D<5	C<5	D>5	C>5	Shade Density Class
Upper Grande Ronde River mainstem	5.5	43.0	48.5	1.8	7.9	6.3	--	--	--	--	7.4
Sheep Cr.	22.0	57.0	21.0	1.4	2.0	1.1	--	--	--	--	0.6
Fly Cr.	69.0	27.0	4.0	2.0	1.7	3.1	--	--	--	--	1.8
McCoy Cr.	40.0	23.0	37.0	1.2	--	--	7.0	0.7	6.0	3.0	7.0
Chicken Cr.				-----Data not available-----							
Meadow Cr.	32.0	36.0	32.0	1.1	--	--	6.0	0.0	6.0	1.3	3.0
Beaver Cr.				-----Data not available-----							
Jordan Cr.				-----Data not available-----							
Whiskey Cr.	33.0	20.0	47.0	2.7	--	--	4.0	2.0	7.0	8.0	19.0
Rock Cr.	25.0	40.0	35.0	2.1	--	--	1.6	0.0	7.0	0.9	7.0
Little Fly Cr.				-----Data not available-----							

1/ For definitions/explanations of the Organic Debris Index; Rioarian Veqetation Density Class and Shade Density Class numeric values, see Appendix A of this report.

2/ Flow features are given as percent Pool (P), Glide/Run (G/R), and Riffle.(R).

3/ Riparian vegetation density classes for 1985 were in terms of Brush (Br) and Trees (Tr).

4/ Riparian vegetation density classes for 1986-1987 were in terms of Deciduous (D) and Coniferous (C) plants less than five feet tall (<5) or greater than five feet tall (>5).

Table B-2. A summary of riparian habitat inventory data[1] by stream within the Joseph Creek subbasin.

Stream	Flow Features (%) [2] P	G/R	R	Organic Debris Index	Riparian Vegetation Density Class 1985 [3] Br	Tr	1986 - 1987 [4] D<5	C<5	D>5	C>5	Shade Density Class
Upper Elk Cr. (USFS lands)	9.5	37.4	53.1	3.7	--	--	10.5	5.0	15.3	23.3	24.3
Lower Elk Cr. (Private lands)	16.4	46.0	37.6	2.8	7.2	11.1	--	--	--	--	18.3
Crow Cr.	34.8	39.8	25.4	2.3	--	--	3.6	.01	21.9	1.2	19.3
Lower Swamp Cr. (USFS lands)	22.1	37.7	40.2	3.0	--	--	5.0	.42	18.7	13.7	28.7
Upper Swamp Cr. (Private lands)	26.5	49.8	23.7	3.1	15.1	16.9	--	--	--	--	27.8
Chesnimnus Cr.	6.6	64.1	29.3	2.1	--	--	13.1	.05	20.1	1.5	9.3
Pine Cr. System	18.0	65.0	17.0	2.0	--	--	8.9	.11	8.9	1.5	12.5
Butte Cr.	11.5	44.4	44.1	2.5	--	--	6.8	0	25.9	0.4	29.7
Davis Cr.	-----Data not available-----										
Joseph Cr.	-----Data not available-----										

[1] For definitions/explanations of the Organic Debris Index, Riparian Vegetation Density Class an-d Shade Density Class numeric values, see Appendix A of this report.

[2] Flow features are given as percent Pool (P), Glide/Run (G/R), and Riffle (R).

[3] Riparian vegetation density classes for 1985 were in terms of Brush (Br) and Trees (Tr).

[4] Riparian vegetation density classes for 1986-1987 were in terms of Deciduous (D) and Coniferous (C) plants less than five feet tall (<5) or greater than five feet tall (>5).

Appendix - C

Swamp Creek Breeding Bird Survey

SWAMP CREEK BREEDING BIRD SURVEY 1987

The breeding bird survey route initiated in 1986 was conducted this. year on July 7, 1987. Stops were identical to last year, although weather was not as favorable with cooler temperatures and slight wind hampering bird activity and the observer's ability to detect calling or singing birds. Habitat conditions appear'to be similiar to last year with the exception of additional ground vegetation. Trees and shrubs appeared to increase only slightly.

Results.were slightly different than last year.One hundred five individuals representing. 21 species were seen this year compared to 143 individuals of 23 species last year. Great blue heron, red-tailed hawk, western kingbird red-breasted nuthatch and western tanager were recorded this year but not in 1986 Bird species seen in but not detected this year include: dusky/Hammon's flychatcher, barn swallow, house wren, MacGillivray's warbler, Nashville warbler, and American coot.

Species distibution along the route was less this year compared to 1986 considering the number of stops a species was recorded on. Last year 9 species were seen on 50% or more of the stops compared to only 5 species this year.

Unfavorable' survey conditions, slow woody riparian plant species recovery, and a short time span apparently all contribute to no detectable differences in bird species occurance, distribution and abundance along this stretch of riparian habitat improvement along Swamp Creek.

Surveys should be continued to monitor bird population changes as the habitats improve under the exclusion of livestock grazing.

The following table compares 1987 results to those of 1986. Species indicated by * were found exclusively in the riparian corridor habitat.

Species	1986		1987	
	Number	Stops/Specie&	Number	Stops/Species
*Great Blue Heron	---	---	1	1
Red-tailed Hawk	---	---	1	1
*Ring-necked Pheasant	2	2	1	1
*Common Snipe	4	3	---	---
Mourning Dove	4	4	2	2
Common Nighthawk	1	1	1	1
Dusky/Hammond's Flycatcher	1	1	---	---
*Willhw Flycatcher	5	4	4	2
Western Wood Pewee	4	3	2	2
Western Kingbird		---	1	1
*Barn Swallow	3	2		---
Steller's Jay	Mu-	---	1	1
House Wren	1	1	---	---
Rock Wren	5	3	1	1
Red-breasted Nuthatch		---	1	1
American Robin	30	6	22	6
*Common Yellowthroat		1	1	1
"MacGillivray's Warbler	-	1	---	---
Western Tanager	---	---	1	1
Chipping Sparrow	1	1	2	1
*Song Sparrow	1	1	3	3
Dark-eyed Junco	2	1	4	3
Vesper Sparrow	6	3	---	---
*Red-winged Blackbird	16	2	23	2
*Brewer's Blackbird	40	4	23	4
Western Meadowlark	4	3	1	1
Brown-headed Cowbird	9	2	9	3
*American Coot	1	1	---	
Nashville Warble	1	1	---	---

1/A total of 6 stops

29 species total for both years	143 of 23 species	105 of 21 species

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Appendix -.D

"Elgin Youngsters Rehabilitate Streamside"

A Newspaper Article

Elgin youngsters rehabilitate streamside

By Jay Grrffith:;
Obsever Staff Writer

ELGIN -- A classroom full of Elgin youngsters lent Mother Nature a hand an Phillips Creek recently.

Twenty-five students from Steve Stanhope's sixth-grade class built 600 feet of fence and planted 30 dogwoods and 300 willows on the creek sbank in Elgin.

The land belongs to an Elgin landowner who has watched the creek eat away at his pasture land.

The project began in Stanhope's class in early January, the students discussed different fish and the life cycles of salmon and steelhead,

Stanhope, with a visit from Clregon Department of Fish and Wildlife fish habitat technician Ann Reece, told how the steelhaad swim up the creek to spawn and how the young fry live in the creek's pools and eddies, growing into smolt.

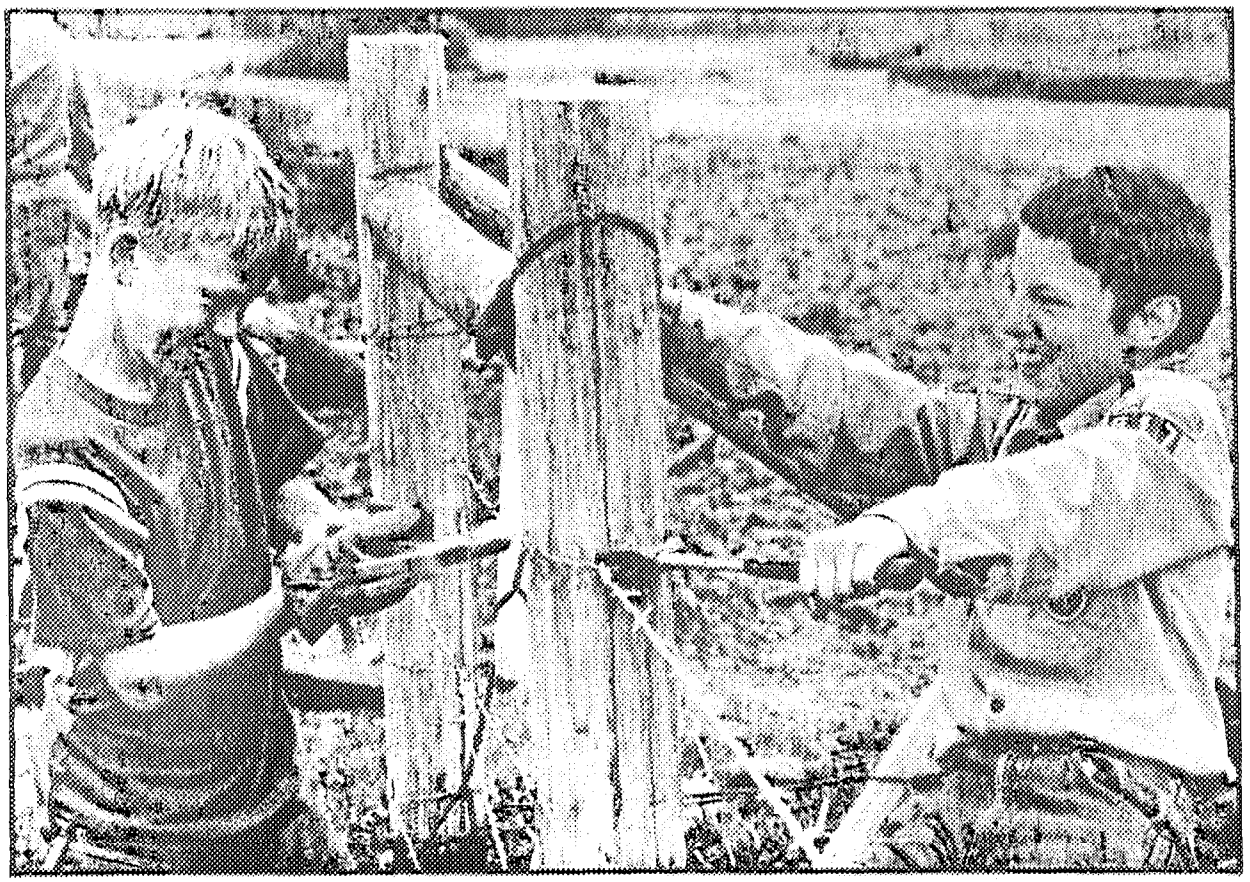
Stanhope talked about the next step, the fish's journey to the ocean and the effects af overfishing and polllution.

Finally, when the steelhead return to the creek to spawn, the cycle is complete.

The students also visited the Wallowa Hatchery near Enterprise, said Stanhape,

They watched. the steelhead being sorted. The ripe fish – those ready to spawn – were separated and stayed in the hatchery, Stnnhope said,

The others were later taken to the upper reaches of the Grande Rondc River, he said,



Observer/Jay Griffiths

Eric Olsen, right, and Eddie Swalberg built a streamside fence near Elgin.

"(The students) thought it was incredible to see all those huge fish," said Starrhope. "They bad 2,00 steelhead the day we were there."

After the lessons in the classroom, the students finally took to the field and the work went quickly.

On the first day, large wooden posts and smaller steel posts were sunk into the marshy ground and a few trees were planted.

The next day, barbed wire was strung, wooden stays were nailed Co the wire find the rest of the trees were planted.

The fence will keep livesttick away from the delicate streamside area.

"That's the first thing that had to be done; keep the animals out of the stream Stanhope said.

Unbothered, the grass soon will grow tall and become home to insects.

The tress also will grow. providing another horns for insects. They will 'hatch, fall into the water and feed the fish.

later, the willows and dogwoods will mature and shade **the pods, which will** hold fish. Now, during the- hot summer days, the pools are too warm for the fish.

"The fry and the smolt can't stand the heat," said Stanhope.

The ODFW leases property frrom landowners and does similar projects, some with funding from the Bonneville Power Administration, said Reece.

"We think it's kind of a neat thing to get out here with the kids and' give hands-an – a mini-verasion of what we da time," she said.